

**CLAIMS**

**WHAT IS CLAIMED:**

1           1.       A method for reconfiguring a signal path in a computing system including a  
2 plurality of system domains, the method comprising:

3               detecting a predetermined condition triggering a reconfiguration of the computing  
4               system;

5               reconfiguring a signal path affected by the condition from a first mode to a second  
6               mode responsive to detecting the condition;

7               leaving the unaffected system domains configured in the first mode; and

8               operating the affected system domains in the second mode and the unaffected system  
9               domains in the first mode.

1           2.       The method of claim 1, wherein detecting the failure includes detecting an  
2 interconnect failure.

1           3.       The method of claim 1, wherein the computing system includes at least one  
2 system control board and wherein detecting the failure includes detecting the failure from the  
3 system control board.

1           4.       The method of claim 1, wherein detecting the failure includes detecting the  
2 failure from the affected system domain.

1           5.       The method of claim 4, wherein the computing system includes at least one  
2 system control board and the method further comprises notifying the system control board of  
3 the error from the affected system domain.

1           6.       The method of claim 1, wherein detecting the failure includes detecting the  
2 failure during first operations.

1           7.       The method of claim 1, wherein detecting the failure includes detecting the  
2 failure upon reset.

1           8.       The method of claim 1, wherein configuring the affected system domains  
2 includes:

3               configuring a first switch in a first affected domain defining a first end of the affected  
4               signal path from the first to the second mode;

5 configuring a crossbar switch defining a second end for the affected signal path from  
6 the first mode to the second mode.

1 9. The method of claim 1, wherein the computing system includes a system  
2 control board and configuring the affected system domains includes configuring the system  
3 domains from the system control board.

1 10. The method of claim 1, wherein:  
2 operating the unaffected system domains in the first mode includes separating a  
3 plurality of information in each transaction into two messages and transmitting  
4 the two messages in parallel, each on a respective half of the signal paths; and  
5 operating the affected system domains in the second mode includes transmitting the  
6 messages in series on a single half of the affected signal path.

1 11. The method of claim 1, wherein:  
2 operating the unaffected system domains in the first mode includes separating a  
3 plurality of information in each transaction into two messages and transmitting  
4 the two messages in parallel in a predetermined number of cycles; and  
5 operating the affected system domains in the first mode includes transmitting a  
6 plurality of information in each transaction in a single message in twice the  
7 predetermined number of cycles.

1 12. The method of claim 1, further comprising at least one of:  
2 defining the system domains;  
3 pausing operations after detecting the failure but before reconfiguring the affected  
4 system domain; and  
5 resetting the computing system after detecting the failure but before reconfiguring the  
6 affected system domain.

1 13. The method of claim 1, wherein dynamically reconfiguring a signal path  
2 affected by the condition from a first mode to a second mode includes dynamically  
3 reconfiguring the signal path affected condition from a normal mode to a degraded mode.

1 14. The method of claim 1, wherein dynamically reconfiguring a signal path  
2 affected by the condition from a first mode to a second mode includes dynamically  
3 reconfiguring the signal path affected condition from a degraded mode to a normal mode.

1           15. A method for reconfiguring a signal path in a computing system including a  
2 plurality of system domains, the method consisting essentially of:  
3 detecting a condition triggering a reconfiguration of the computing system; and  
4 reconfiguring a signal path affected by the condition from a first mode to a second  
5 mode responsive to detecting the condition; and  
6 operating the affected system domains in the second mode and the unaffected system  
7 domains in the first mode.

1           16. A method for reconfiguring a signal path in a computing system including a  
2 plurality of system domains, the method comprising:  
3 detecting a condition triggering a reconfiguration of the computing system; and  
4 reconfiguring a signal path affected by the condition from a first mode to a second  
5 mode responsive to detecting the condition;  
6 operating the affected system domains in the second mode and the unaffected system  
7 domains in the first mode.

1           17. A computing system, comprising:  
2 a plurality of system domains;  
3 a centerplane interconnecting the system domains;  
4 a system controller capable of detecting a condition triggering a reconfiguration and  
5 reconfiguring a signal path affected by the condition from a first mode to a  
6 second mode.

1           18. The computing system of claim 17, wherein the system domains are  
2 dynamically configured.

1           19. The computing system of claim 17, wherein each system domain includes:  
2 a system board;  
3 an expansion board; and  
4 an I/O board.

1           20. The computing system of claim 19, wherein the system board, expansion  
2 board, and I/O board comprise a system board set.

1           21. The computing system of claim 17, wherein the centerplane comprises a  
2 plurality of crossbar switches interconnecting the system domains.

1           22. The computing system of claim 21, wherein the plurality of crossbar switches  
2 includes:

- 3           a data crossbar switch;  
4           an address crossbar switch; and  
5           a response crossbar switch.

1           23. A computing system, comprising:  
2 a plurality of system domains;  
3 a plurality of signal paths among the system domains; and  
4 a system controller capable of condition triggering a reconfiguration and dynamically  
5 reconfiguring a signal path affected by the condition from a first mode to a  
6 second mode.

1           24. The computing system of claim 23, wherein the system domains are  
2 dynamically configured.

1           25. The computing system of claim 23, wherein each system domain includes:  
2 a system board;  
3 an expansion board; and  
4 an I/O board.

1           26. The computing system of claim 25, wherein the system board, expansion  
2 board, and I/O board comprise a system board set.

1           27. The computing system of claim 23, wherein the centerplane comprises a  
2 plurality of crossbar switches interconnecting the system domains.

1           28. The computing system of claim 27, wherein the plurality of crossbar switches  
2 includes:

- 3           a data crossbar switch;  
4           an address crossbar switch; and  
5           a response crossbar switch.

1           29.    The computing system of claim 23, wherein the plurality of signal paths  
2 includes:

- 3           a plurality of data signal paths;  
4           a plurality of address signal paths; and  
5           a plurality of response signal paths.

1           30.    The computing system of claim 23, wherein each signal path comprises:  
2           a first half capable of transmitting a first message containing a first portion of the  
3           information in a given transaction in the normal mode; and  
4           a second half capable of transmitting a second message containing a second portion of  
5           the information in the transaction in the normal mode.

1           31.    The computing system of claim 30, wherein both the first and second halves  
2 are capable of transmitting a single message containing both the first and second portions in  
3 the degraded mode.

1           32.    The computing system of claim 23, wherein each signal path terminates at a  
2 first end in a first one of the system domains, routes through a crossbar switch, and terminates  
3 at a second end in a second one of the system domains.

1           33.    The computing system of claim 32, wherein the system domains and the signal  
2 paths are configurable by configuring the first end, the second end, and the crossbar switch.

1           34.    A computing system, comprising:  
2           a system controller;  
3           a plurality of system domains;  
4           at least one crossbar switch interconnecting the system domains;  
5           a plurality of signal paths, each signal path terminating at a first end in a first one of  
6           the system domains, routing through the crossbar switch, and terminating at a  
7           second end in a second one of the system domains; and  
8           a console connection over which the system controller can, responsive to a condition  
9           triggering a reconfiguration, reconfigure a plurality of the system domains  
10          affected by the condition and the crossbar switch to operate the affected signal  
11          paths in a first mode while the signal paths domains unaffected by the failure  
12          operate in a second mode.

1           35.    A computing system, comprising:  
2           a plurality of system boards from which a plurality of system domains can be defined;  
3           a centerplane including at least one crossbar switch interconnecting the system  
4           domains to provide a plurality of signal paths among the system boards; and  
5           a system control board hosting a system controller capable of defining the system  
6           domains, configuring the system domains and the crossbar switch to operate  
7           the signal paths in a first mode, and, responsive to a condition triggering a  
8           reconfiguration, reconfiguring the affected system domains and the crossbar  
9           switch to operate the affected signal paths in a second mode while the  
10          unaffected signals paths operate in the first mode.

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